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EXAMINER

FOSTER, ROLAND G

ART UNIT

PAPER NUMBER

2645

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/059,905	ODINAK ET AL.
	Examiner Roland G. Foster	Art Unit 2645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 December 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Nonetheless, applicant argues that the processing techniques performed by the user devices are not speech recognition (last paragraph on page five of the applicant's amendment, filed on December 23, 2002 as Paper No. 4). However, the applicant then contradicts this assertion by claiming that the processing performed at the user system does indeed include speech recognition (e.g., claims 10, 23 and 33). Therefore, even if Moore et al. (U.S. Patent No. 6,125,284), Jacobs et al. (U.S. Patent No. 5,956,683), and newly cited Pickering (U.S. Patent No. 6,496,799 B1) disclosed that complete speech recognition were performed at the user system (which they do not), this would have been consistent with the applicant's claimed invention.

Therefore, the following rejections are repeated except where any new grounds of rejection are necessitated by the amendment to the claims.

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Claim Objections

Claims 5, 12, 21, and 28 are objected to because of the following informalities. The claims appear to be directed to a limitation that is more broadly recited than similar limitations in the parent independent claims. Therefore, the claims are substantial duplicates. Appropriate correction or clarification is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 5, 10, 12, 12, 28, and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite limitations directed to "front-end", however there is insufficient antecedent basis because the applicant removed "front-end" limitations from the independent claims by amendment. The claims will be interpreted as if "front-end"

were not recited as appears consistent with the applicant's intent. Correction is required.

Claim Rejections Using Hughes as a Base Reference

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-6, 11-13, 16-18, 24, and 27-29 are rejected
under 35 U.S.C. 102(e) as being anticipated by Hughes et al.
(U.S. Patent No. 6,453,020 B1), newly cited.

With respect to claim 11, see the following the paragraphs
for details on how Hughes anticipates particular limitations
within the claim.

"[R]eceiving user voice input at a user system" reads on
Fig. 4, step 640 where the user's voice input is received at the

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voice activity detector (VAD) 135 within the digital trunk processor (DTP) 135. The DTP 135 is a user system because the DTP 135 is a "system" that supports a telephonic interface to plural telephone "users".

"[P]rocessing the received user voice input at the user system, based on two or more of noise cancellation, echo-cancellation or end-pointing" reads on Hues as follows. The DTP 135 (user system) includes VAD 124 and echo canceller 126. The VAD 124 processes the user voice input by discriminating the presence of voice energy as opposed to noise (i.e., noise cancellation) (col. 8, lines 7-24). The echo canceller 126 processes the user voice input based on echo cancellation (col. 8, lines 26-37).

"[S]ending the processed user voice input to a server over a network" reads on Fig. 2, Fig. 4, step 660, and col. 4, lines 34-40 where the processed user voice input (at DTP 135) is sent to voice recognition server 300 over local area network 250.

"[P]erforming speech recognition processing of the sent... processed user voice input at the server" reads on Fig. 2, Fig.

4, step 670 where speech recognition is performed at the recognition server 300.

"[P]erforming a function at the server based on the performed speech recognition" reads on col. 9, lines 45-56.

Claim 1 differs substantively claim 11 in that claim 1 is recited more broadly than claim 11. Therefore, see the claim 1 rejection for further details.

Claim 13 differs substantively from claim 11 in that claim 13 recites a system that performs functions equivalent to the method steps of claim 11. Therefore, see the claim 11 rejection for additional details. Further, claim 13 recites named system components that read on Fig. 1 of Hughes as follows: "a microphone" reads on telephone network 110 which inherently includes a telephone which in turn inherently includes a microphone for the telephone; "a processor configured to perform front-end voice processing" reads on DTP 130; "a communication component configured to send" reads on DVT client 410; "a communication component configured to receive" reads on DVT server 420; "a processor configured to complete voice processing" reads on Record B 320 or 425.

Claim 24 differs substantively from claim 11 in that claim 24 recites a means that performs functions equivalent to the method steps of claim 11. Therefore, see the claim 11 for further details.

With respect to claims 4 ,6, 16, 18, 27, and 29, see the claim 11 rejection above for further details where the voice activity detection and echo cancellation functions require sampling.

With respect to claims 5, 12, 17, and 28, see the claim 11 rejection above for further details.

Claim Rejections Using Jacobs as a Base Reference

Claims 1, 10, 11, 13, 24, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobs et al. (U.S. Patent No. 5,956,683) ("Jacobs"), of record.

With respect to claim 11, see the following the paragraphs for details on how Jacobs anticipates particular limitations within the claim.

"[R]eceiving user voice input at a user system" reads on the Fig. 5 and col. 9, lines 6-8 where user voice input is received at portable telephone 100 (user system).

"[P]rocessing the received user voice input at the user system, based on two or more of noise cancellation, echo-cancellation or end-pointing" reads on Jacobs as follows. Local voice processing of the received voice is performed at the telephone (user system) in order to extract voice features (Figs. 5 and col. 9, lines 8-20). The local voice processing analysis includes feature analysis based upon noise cancellation (col. 7, lines 1-8) and word decoding (Fig. 5, local word decoder 106). Word decoding requires end-pointing in order to determine the beginning and end points of each word decoded from a string of input speech signals.

"[S]ending the processed user voice input to a server over a network" reads on Fig. 5, and col. 9, lines 8-20 where the processed voice input is sent to central communications center 110 (server) over the telephone network.

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"[C]ompleting voice processing of the sent front-end processed user voice input at the server" reads on col. 9, lines 8-20 where voice processing is completed at the central communications center 110 (server).

"[P]erforming speech recognition processing of the sent... processed user voice input at the server" reads on col. 5, lines 44-56 where the central communication center (sever) "performs the functions of amplification, modulation, and coding of the action signal" which is based on the completed voice processing as discussed above.

Claim 1 differs substantively claim 11 in that claim 1 is recited more broadly than claim 11. Therefore, see the claim 1 rejection for further details.

Claim 13 differs substantively from claim 11 in that claim 13 recites a system that performs functions equivalent to the method steps of claim 11. Therefore, see the claim 11 rejection for additional details. Further, claim 13 recites named system components that read on Fig. 2 of Jacobs as follows: "a microphone" reads on microphone 20; "a processor configured to perform front-end voice processing" reads on feature extraction

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element 22 which "processes" the received user voice input in the front end; "a communication component configured to send" reads on transmitter 24; "a communication component configured to receive" reads on receiver 46; "a processor configured to complete voice processing" reads on word decoder 48 which further "processes" the processed user voice input in order to generate an action signal as discussed above.

Claim 24 differs substantively from claim 11 in that claim 24 recites a means that performs functions equivalent to the method steps of claim 11. Therefore, see the claim 11 for further details.

With respect to claims 10 and 33, the local word decoder 106 discussed in the claim 11 rejection performs some recognition (col. 9, lines 6-20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at

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the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs as applied to claims 1, 13, and 24 above, and further in view of Reed et al. (U.S. Patent No. 5,371,901) ("Reed"), of record.

Although Jacobs teaches of a mobile telephone as discussed above, Jacobs fails to disclose that the mobile telephone is used in a "vehicle".

However, Jacobs teaches of a mobile telephone, remote voice recognition system (abstract and Fig. 1) implemented in a vehicle (col. 2, lines 33-46).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a vehicle as taught by the mobile telephone, remote voice recognition system of Reed to the mobile telephone, remote voice recognition system of Jacobs.

The suggestion/motivation for doing so would have been to increase user-friendliness, flexibility, versatility and mobility by allowing the user to use the cellular telephone in a vehicle, as would have been notoriously well-known in the art. In addition, safety would have been increased because the voice-operated, mobile telephone disclosed by Jacobs would have allowed to user to drive the car while minimizing manual and distracting interaction with the telephone.

Claims 7-9 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs as applied to claims 1 and 24

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above, and further in view of Kennedy, III et al. (U.S. Patent No. 5,539,810) ("Kennedy"), of record.

Although Jacobs discloses that processed user voice input is sent to the server, Jacobs fails to disclose: 1) "receiving user system status information", 2) sending the status information and processed voice information "based on transmission requirements", 3) where the status information and voice information is "interspersed [in] distinct transmission packets", and 4) where the status information is sent when "no user voice is received."

However, Kennedy teaches of a mobile telephone system that supports data messaging in order to perform remote monitoring (Figs. 1, 7, and col. 1, lines 60-67, and col. 6, line 62 - col. 7, line 44). Specifically, the mobile telephone 216: 1) receives global positioning satellite (GPS) data 272 and other status information 274 and 276, 2) sends the status information (col. 7, lines 45-67) and voice information "based on unoccupied sections of the digital bit stream" (transmission requirements) (col. 5, lines 47-57), 3) where the status information and voice are interspersed by using the cellular digital packet data (CDPD) protocol (distinct transmission packets) (col. 5, lines

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47-57). Because the status information is "interspersed" with voice (*supra*) and because the status information is sent during "unoccupied sections" of the bit stream (*supra*), the status information would be 4) sent when "no user voice is received" at the mobile telephone.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add the mobile telephone that 1) receives status information, 2) sends the information and voice based upon transmission requirements, 3) intersperses the information with voice in distinct transmission packets, and 4) when no user voice is received as taught by the mobile telephone system of Kennedy to the mobile telephone system disclosed by Jacobs.

The suggestion/motivation for doing so would have been to increase the accuracy, versatility, and flexibility of monitoring systems by transferring data over a mobile telephone system in order to monitor mobile people and vehicles (Kennedy, col. 1, lines 26-40). Further, the use of data messaging in mobile systems would have been recognized in the art of mobile communications as "mobile data messaging" (Kennedy, col. 1, lines 24-26). Finally, the efficiency of mobile data messaging

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would have been increased by conserving bandwidth by transmitting the data during "unoccupied sections of the digital bit stream" and interspersed with voice (Kennedy, col. 5, lines 47-55).

Claim Rejections Using Moore as a Base Reference

Claim Rejections - 35 USC § 103

Claims 1, 2, 4-6, 10-14, 16-25, 27-29, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (U.S. Patent 6,125,284) ("Moore"), of record, in view of Gupta et al. (U.S. Patent No. 5,649,055) ("Gupta"), newly cited.

With respect to claim 11, see the following the paragraphs for details on how Moore discloses particular limitations within the claim.

"[R]eceiving user voice input at a user system" reads on the abstract and Fig. 1 where user voice input is received at the mobile handset 1 (user system).

"[P]rocessing the received user voice input at the user system, based on two or more of noise cancellation..." reads on Moore as follows. Voice processing of the received voice is

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performed at the handset (user system) (Fig. 4 and col. 2, lines 28-33). The voice processing includes noise cancellation (col. 4, lines 66 and 67).

"[S]ending the processed user voice input to a server over a network" reads on Fig. 1 and col. 2, lines 28-40 where the processed voice input is sent to central platform 5 (server) over the telephone networks 3 and 4.

"[P]erforming speech recognition processing of the sent front-end processed user voice input at the server" reads on col. 2, lines 28-40 where the "speech recognition process...[is]...completed in at remote central server."

"[P]erforming a function at the server based on the performed speech recognition" reads on col. 2, lines 50-53.

Although Moore teaches that the processing of the user voice input includes noise cancellation, Moore fails to disclose that the processing includes one of echo-cancellation or end-pointing. However, Moore discloses a wireless telephone system where a digital signal processor (DSP) 8 digitizes speech input

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from a microphone 8 in order to perform feature analysis upon the digitized speech signal (Fig. 4, steps 60, 62, and 63)

To this point, Gupta also teaches of a wireless telephone system where a master and slave DSP digitize speech input from a microphone in order to perform feature analysis upon the digitized speech signal (Figs. 1, 2-6, col. 1, lines 21-26, and col. 2, line 40 - col. 4, line 5). The feature analysis includes echo cancellation (col. 3, lines 36-38) and speech end-pointing (col. 3, lines 41-51).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add echo cancellation and speech end-point as taught by the wireless telephone system where DSP(s) digitize speech input from a microphone using feature analysis as taught by Gupta to the wireless telephone system where a DSP digitizes speech input from a microphone using feature analysis as disclosed by Moore.

The suggestion/motivation for doing so would have been to increase digitized voice signal accuracy because an echo canceller would have "suppress[ed] any feedback occurring either due to use of speakerphones or acoustic or electrical echoes"

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(Gupta, col. 3, lines 33-35). In addition, detecting the beginning and end of voice activity is voice activity detection. Voice activity detection has "particular application to...cellular telephone systems" (Gupta, col. 1, lines 21-26) and therefore to the cellular telephone system of Moore. Further, voice activity detection would have increased digitized voice signal accuracy and increased performance because "voice activity detect[ion]...is used to detect speech for applications in digital speech interpolation (DSI) and noise suppression" (Gupta, col. 1, lines 28-30) such as the noise suppression of Moore as discussed above.

Claim 1 differs substantively claim 11 in that claim 1 is recited more broadly than claim 11. Therefore, see the claim 1 rejection for further details.

Claim 13 differs substantively from claim 11 in that claim 13 recites a system that performs functions equivalent to the method steps of claim 11. Therefore, see the claim 11 rejection for additional details. Further, claim 13 recites named system components that read on Fig. 1 of Moore as follows: "a microphone" reads on microphone 8; "a processor configured to perform front-end voice processing" reads on DSP 7; "a

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communication component configured to send" reads on antenna 9; "a communication component configured to receive" reads on central platform 5; "a processor configured to complete voice processing" reads on voice processing host 35.

Claim 24 differs substantively from claim 11 in that claim 24 recites a means that performs functions equivalent to the method steps of claim 11. Therefore, see the claim 11 for further details.

With respect to claims 2, 14, and 25, see Fig. 1, wireless network 3.

With respect to claims 4 ,6, 16, 18, 27, and 29, see the claim 11 rejection above for further details.

With respect to claims 10, 23, and 33, see Fig. 2, voice processing host 35.

With respect to claims 5, 12, 17, 21, and 28, "performing front-end voice processing of the received user voice input comprises at last one of noise cancellation...or" reads on col. 4, lines 65-67.

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With respect to claim 19, the handset comprises a DSP in the form of a RISC based, processor chip (col. 4, lines 63-65). A RISC based, processor chip is a "module" that can at the least be forcibly "removed" from the handset. Plural DSPs were added by Gupta as discussed in the claim 11 rejection above.

With respect to claim 20, the RISC based, processor chip is a "processing" module that performs the sampling discussed in the claim 11 rejection. See also col. 6, lines 30-40.

With respect to claim 22, the RISC based, processor chip (module) also performs phone adapter functions (e.g., voice to digital conversion) and wireless network communication functions.

Claims 3, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore in view of Gupta as applied to claims 1, 13, and 24 above, and further in view of Reed. See the claims 3, 15, and 26 "Jacobs in view of Reed" rejection above for further details because the reasons for adding Reed to mobile telephone system of Jacobs would have also applied to the mobile telephone system of Moore as well.

Claims 7-9 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs as applied to claims 1 and 24 above, and further in view of Kennedy. See the claims 7-9 and 30-32 "Jacobs in view of Reed" rejection above for further details because the reasons for adding Reed to mobile telephone system of Jacobs would have also applied to the mobile telephone system of Moore as well.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated

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from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roland Foster whose telephone number is (703) 305-1491. The examiner can normally be reached on Monday through Friday from 9:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan S. Tsang, can be reached on (703) 305-4895. The fax phone number for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is (703) 306-0377.

FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

R.C.F.
r.g.f.
March 6, 2003

